

Bruker Detection Corporation - μRAID Portable Chemical Identifier



GENERAL DESCRIPTION:

Bruker's μRAID Portable Chemical Identifier is the newest IMS based detector on the market today. It has highly advanced capabilities with a combined chemical warfare agent and industrial toxic chemical vapor library and four additional libraries. It also has built in interference rejection for more common harmless chemicals. It is extremely fast to respond with actual agent identification without comprising sensitivity. Its new design makes it half the size and weight of Bruker's established RAID-M with much more library capability. The μRAID Portable Chemical Identifier has flexible battery configurations for either military or commercial battery packs and can detect at altitudes up to 21000 ft. Recent field trials conducted by DHS S&T showed impressive results in which it even beat the ground truth instrument in speed and accuracy.



TECHNICAL DESCRIPTION:

Bruker's μRAID Portable Chemical Identifier employs ion mobility spectrometry using spectral matching software to locate, classify, and identify chemical warfare agents and toxic industrial chemicals simultaneously. It features a membrane inlet to protect from contamination and environmental effects as well as agent specific automatic back flush to protect from saturation. The μRAID Portable Chemical Identifier also features Bluetooth, USB, and serial interfaces.

Tier Selection

Final tier assignment is based on overall product score.

- Top Tier ◐ Second Tier ○ Third Tier
- ◑ Fourth Tier ● Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	N/A	●	N/A
MOBILE Laboratory	N/A	●	N/A
DIAGNOSTIC Laboratory	N/A	◐	N/A
ANALYTICAL Laboratory	N/A	◐	N/A

CONTACT INFORMATION

Bruker Detection Corporation
 40 Manning Rd
 Billerica, MA 01821

COST

- \$10,750/system
- N/A/analysis

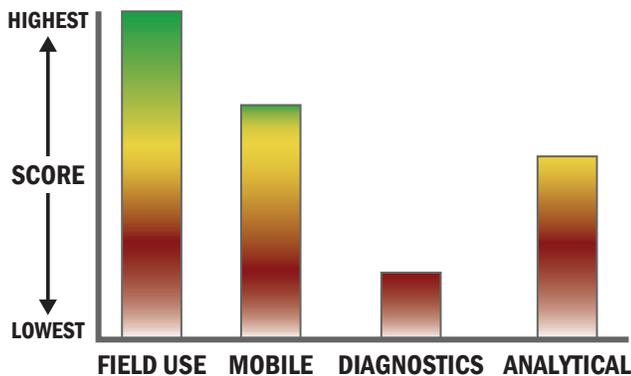
Survey Source

Vendor Supplied Information



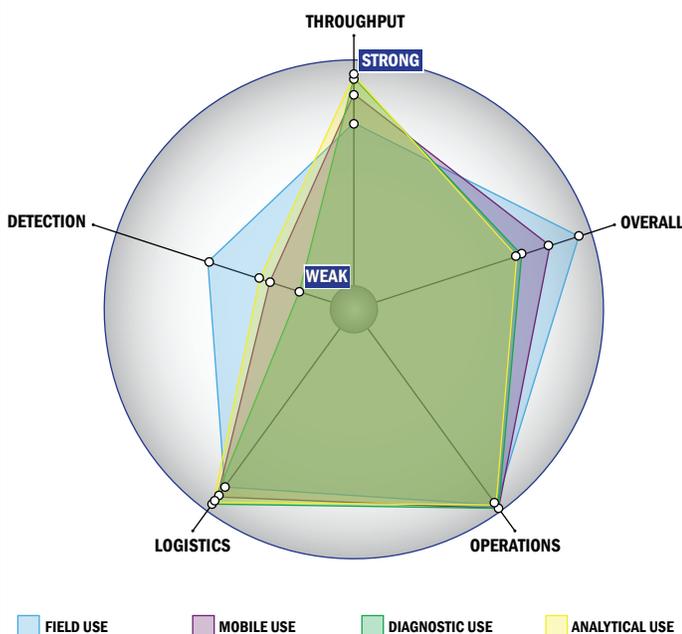
Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



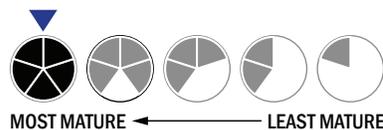
Evaluation Criteria

Throughput:

- Detection is instantaneous
- Continuous operation with no defined runs
- System is continuous and provides real time analysis with no defined tests/samples
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 0 components
- Less than 5 minutes is required for set-up
- No steps for a single detection assay

Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a toaster
- Between 1 and 5 kg
- Wireless and wired connections are available
- System or device uses batteries
- 4-8 hours battery life
- Is commercially available and meets military specifications



Operations:

- Can be used from -21°C to $> 42^{\circ}\text{C}$ (All temperatures)
- This system does not require consumable components
- Performance is not influenced by relative humidity
- Greater than 10 years expected life of system
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- This system does not test liquids
- Excellent specificity. System has occasional false alarms under certain conditions ($<2\%$)
- $<1 \times 10^{-6}$ mg/m³ chemical agent in air
- System currently can identify aerosolized chemical agent
- Not possible for the system to identify liquid chemical agent